UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/904,147	07/11/2001	Shinsuke Mori	JP9-2000-0133US1	2401

			EXAMINER
35195	7590	07/03/2006	

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ART UNIT	PAPER NUMBER
2626	

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Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/904,147	MORI ET AL.
	Examiner	Art Unit	
	Thomas E. Shortledge	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *17 April 2006*.

2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-21* is/are pending in the application.

    4a) Of the above claim(s) *7,13 and 21* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-6, 8-12, and 14-20* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

1.   This response is in response to Remarks, filed 04/17/2006.

2.   Claims 1-6, 8-12 and 14-20 are pending. Claims 1, 4, 8-9 and 14-20 are independent claims.

3.   In response to the Election/Restriction requirement the applicant has selected claims 1-6, 8-12 and 14-20 and claims 7, 13, and 21 have been withdrawn.

Response to Arguments

4.   Applicant's arguments filed 04/17/2006 have been fully considered but they are not persuasive.

The applicant argues that all the present independent claims include the feature "modification relationship" which is not taught by Chelba et al. (Exploiting Syntactic Structure for Language Modeling) (Remarks, page 13, lines 1-6 and page 14, lines 6-14) neither alone nor in combination with Kuhn (Speech Recognition and the Frequency of Recently Used Words) (Remarks page 15, lines 9-20). However, the examiner argues that Chelba et al. teach predicting a word based on the word sequence preceding the predicted word and that different word sequences would predict different words. The word sequence includes an analysis tree expanding the word history of the sequence of words used to predict word to be predicted. Different word sequences

would have different histories, leading to the prediction of different words. Therefore,

the histories of the word sequences would show how different word sequences modified

the word to be predicted based on the analysis tree (page 226, col. 1 and page 227, col.

2).

The applicant argues that the obvious-type double patenting the claims of the

copending application do not appear to teach or suggest all the presently claimed

elements of the present invention. However, the examiner argues that the obviousness-

type double patenting rejection is correct since the present application teaches a

method of word prediction using a partial analysis tree structure of the a sentence

structure around the target word to predict the target word, and the copending

application No. 10/226,564 recite a word prediction method using the word history of the

target word to predict the target word, where the word history contains analysis trees

representing each possible prediction. As can be seen both methods recite predicting a

word based on analysis tree structures representing the words the words to be

predicted and the surrounding words.

Double Patenting

5.   The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees. A nonstatutory
obviousness-type double patenting rejection is appropriate where the conflicting claims
are not identical, but at least one examined application claim is not patentably distinct

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

6.   Claims 1-6, and 15-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 10/226,564. Although the conflicting claims are not identical, they are not patentably distinct from each other because claims 1-7 and 15-21 of the instant application recite a word prediction method, using a partial analysis tree structure of the sentence structure around the target word to predict the target word, and claims 1-6 of copending Application No. 10/226,564 recite a word prediction method using the word history of the target word to predict the target word, where the word history contains analysis trees representing each possible prediction.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

7.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8.   Claims 1-6, and 15-20 rejected under 35 U.S.C. 102(b) as being anticipated by

Chelba et al. (Exploiting Syntactic Structure for Language Modeling).

As to claims 1, 15, 17 and 19, Chelba et al. teach:

a computer readable program (col. 1, page 225);

specifying a sentence structure consisting of multiple words, including a target

word to be predicted (specifying a word phrase, and predicting a word within the phrase,

page 225, col. 2, through page 226, col. 1);

employing said sentence structure to select a word and/or a word sequence that

has a modification relationship with said target word to be predicted (predicting the word

based on the word sequence proceeding the word, page 226, col. 2); and

predicting said target word based on said word and/or word sequence that is

selected (predicting the word based on the partial parse of the word history , col. 2,

page 225).

As to claim 2, Chelba et al. teach said word and/or word sequence constitute partial analysis tree structure in said sentence structure (using partial pareses of the word history to predict the word, col. 2, page 225).

As to claim 3, Chelba et al. teach when multiple words and/or word sequences are selected, word prediction is preformed based on said words and/or word sequences that are selected (the word prediction is based on the word history, which can include a single word, or multiple words, col. 2, page 225, through col. 1, page 226).

As to claims 4, 16, 18 and 20, Chelba et al. teach:

a computer readable program (col. 1, page 225);

specifying a modification of a word to be predicted by a different word and/or word sequence (specifying a word phrase, and predicting a word within the phrase, page 225, col. 2, through page 226, col. 1);

prediction said word using said different word/or word sequence that is specified (the word prediction is based on the word history, which can include a single word, or multiple words, col. 2, page 225, through col. 1, page 226); and

a transmitter, which reads said program from said storer and transmits said program (using the program within a automatic speech recognition device, col. 1, page 225).

As to claim 5, Chelba et al. teach said modification includes a modification direction, and said word to predicted modifies a prior word (the word history is used to predict a word to the right of the last word within the history, where that word is able to modify a proceeding word, col. 2, page 225).

As to claim 6, Chelba et al. teach when multiple modifications are established between said word to be predicted and said different word and/or word sequence, a word is predicted for each of said modifications (the word prediction is based on the word history, which can include a single word, or multiple words, col. 2, page 225, through col. 1, page 226).

Claim Rejections - 35 USC § 103

9.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   Claims 8, 9 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chelba et al.

As to claim 8, Chelba et al. teach:

a predictor which employs a structure of a sentence consisting of multiple words, including a word to be predicted to select a word/or a word sequence that has a modification relationship with said word to be predicted, and which predicts said word based on said word and/or said word sequence that is selected (a predictor that uses the word history within a phrase to predict the needed word, where the word history has a relationship with the word to be predicted, a different history would predict a different word, col. 2, page 225, through col. 1, page 226).

Chelba et al. do not explicitly teach a store which stores a dictionary wherein text data that have been learned is written. However, the system is able to create all possible binary branching parses with all possible headword and no-terminal label assignments for the words within the word sequence. These partial parses are then used to predict the word. It would be obvious to one of ordinary skill in the art at the time of the invention that since these partial parse trees are created, then later used, they would be stored once they are created, creating a store wherein text data that has been learned is written.

As to claim 9, Chelba et al. teach a predictor which selects a word and/or a word sequence that has a modification relationship with a word to be predicted, and which predicts said word based on said word and/or said word sequence that is selected (specifying a word phrase, where the word history is created from the phrase, and is

able to predict the word and its part of speech, page 225, col. 2, through page 226, col.

1).

Chelba et al. do not explicitly teach a store which stores a dictionary wherein text

data that have been learned is written. However, the system is able to create all

possible binary branching parses with all possible headword and no-terminal label

assignments for the words within the word sequence. These partial parses are then

used to predict the word. It would be obvious to one of ordinary skill in the art at the

time of the invention that since these partial parse trees are created, then later used,

they would be stored once they are created, creating a store wherein text data that has

been learned is written.

As to claim 14, Chelba et al. teach:

a specifier which specifies a modification relationship between a word to be

predicted and another word/or word sequence, and which predicts said word by

employing said word/or word sequence modifying said word (specifying a word phrase,

from the headword to the last word before the word to be predicted, and using the

specified word phrase to predict the word, page 225, col. 2, through page 226, col. 1);

a display, which displays said word that Is predicted and said modification

relationship (usable within automatic speech recognition device, (col. 1, page 225),

where it would be obvious to one of ordinary skill in the art, that such a device would be

a computer system with a display, since the speech recognition is converted to text).

11.   Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Chelba et al. and further in view of Kuhn.

        As to claim 10, Chelba et al. do not explicitly teach for a predetermined word or

word sequence based on said text data, a frequency where at another predetermined

word appears is stored in said dictionary.

        However, Kuhn teaches predicting the word based on its frequency of

occurrence stored within a knowledge base, (col. 1, page 348).

        Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention to combine the teachings of Chelba et al. with the methods taught by

Kuhn to increase the ability of a speech recognizer to identify a word by assigning

higher probabilities to words that have been the most recently used, limiting the

vocabulary needed, as taught by Kuhn, (page 350, col. 1and col. 2).

        As to claim 11, Chelba et al. do not explicitly teach said predictor calculates a

probability value for a word sequence including a word that is predicted based on said

frequency.

        However, Kuhn teaches assigning higher probabilities to sequences containing

words based on their frequency of use, (col. 1, page 348).

        Therefore it would have been obvious to one of ordinary skill in the art at the time

of the invention to combine the teachings of Chelba et al. with the methods taught by

Kuhn to increase the ability of a speech recognizer to identify a word by assigning

higher probabilities to words that have been the most recently used, limiting the

vocabulary needed, as taught by Kuhn, (page 350, col. 1and col. 2).

As to claim 12, Chelba et al. teach a predictor selects, as a prediction result, a

word sequence having the maximum probability value (ranking and selecting the word

sequences, col. 1, page 228).

Conclusion

12.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

13.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Thomas E. Shortledge whose telephone number is

(571)272-7612. The examiner can normally be reached on M-F 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Richemond Dorvil can be reached on (571)272-7602. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TS
06/26/2006

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SUPERVISORY PATENT EXAMINER